

*Dr. J. C. Billings*  
*with the kind regards*  
*of A. Minis Hays.*  
HAYS (I.M.)

## A MEMOIR

OF

SAMUEL D. GROSS, M.D., LL.D., D.C.L.,

EMERITUS PROFESSOR OF SURGERY IN THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.



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Engraved by Samuel Sargis, Phil<sup>a</sup>

A. D. Grop.  
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IN the history of American medicine, in the long list of names of men who have been especially distinguished by their valuable contributions to the science and art of surgery, we find but two who are conspicuously pre-eminent, and upon whom, each alone in his generation, has been conferred by general assent the honoured title of "The Nestor of American Surgery." Of the two, Philip Syng Physick was gathered unto his fathers nearly half a century ago; and to-day we mourn the loss of SAMUEL D. GROSS.

Dr. Physick, although a surgeon of great learning and brilliant capacity, added but little to the literature of our profession, and he left his impress upon American surgery chiefly through the fading tradition of his teachings. But Dr. Gross was, in addition, an industrious and voluminous writer, and has left a precise and imperishable record of his profound study and vast surgical experience.

Dr. Gross was born near Easton, Pennsylvania, July 8, 1805. He received a classical education at the Wilkesbarré Academy and at the Lawrenceville High School, both famous institutions in their day, the former having been under the charge of Mr., afterwards Judge, Joel Jones, a graduate of Yale College, and the latter having been presided over by the Rev. Dr. Isaac Brown, an alumnus of Princeton College. At the age of nineteen he began the study of medicine, first under Dr. Joseph K. Swift, of Easton, and subsequently with Professor George McClellan, the eminent surgeon of Philadelphia. He graduated from the Jefferson Medical College in 1828, and immediately began practising his profession in Philadelphia. During the first ten months of his novitiate, to fill up the intervals of practice, which came but slowly, he translated from the French and German Bayle and Hollard's General Anatomy, Hildebrand on Typhus Fever, Hatin's Manual of Obstetrics, and Tavernier's Operative Surgery,

for which he received eight hundred and seventy-five dollars. In 1830, or two years after his graduation, he published his "Treatise on the Anatomy, Physiology, and Diseases of the Bones and Joints," in which he called attention to the employment of adhesive plaster as a means of extension in fractures of the lower extremity, a method of treatment almost universally in vogue at the present day.

After the lapse of eighteen months, having in the meanwhile married, and his patrimony being almost exhausted, Dr. Gross returned to Easton, where he soon acquired a good practice; and when he left for Cincinnati, in October, 1833, two years and a half afterward, he was regarded as the most learned practitioner of the place. To increase his knowledge of practical anatomy he erected at the foot of his garden a dissecting-room, having brought his first cadaver in a buggy from Philadelphia, but he subsequently obtained material nearer home, not, however, without incurring great risk of detection. He dissected and performed the more important operations on the cadaver several hours daily, and in this way obtained a vast amount of information which proved of the utmost value to him in subsequent years. All his leisure hours in the summer were spent upon the composition of a work on descriptive anatomy, which was, however, never completed. The MS., still in existence, contains the first effort in the English language to change the nomenclature of anatomy from Latin into English, a plan which, at his suggestion, was afterward adopted by his pupil, Dr. T. G. Richardson, now Professor of Surgery in the University of Louisiana, in his work on Anatomy, and subsequently by Professor Leidy, of the University of Pennsylvania, in his text-book on Anatomy.

During his residence at Easton, Dr. Gross made a series of observations upon the temperature of venous blood—altogether fifty in number—mostly of healthy persons, and found, as an average,  $96^{\circ}$  Fahr., the maximum being  $104^{\circ}$ , and the minimum  $92^{\circ}$ . Hence, he regarded the average of  $98^{\circ}$ , as usually stated, as too high. The results of these investigations were published at Cincinnati in 1835, in the second volume of the *Western Medical Gazette*. He also noticed in these observations a singular phenomenon, then, if not still, unknown, that if the arm be tied firmly for five or six minutes before opening the vein, the temperature of the blood which flows during the first thirty or forty seconds will be several degrees lower than that which issues subsequently, a fact which is probably due to the stationary condition of the blood in the veins. In addition to these experiments, he conducted others upon excretion to ascertain the rapid transit of certain articles, when taken into the stomach, through the blood by the kidneys. For this purpose he selected rabbits, to which, after having tied both renal arteries, he administered protoxide of iron. The animals were killed within fifteen to thirty minutes, and upon applying a solution of cyanide of potassium to the urine in the bladder, ureters, and kidneys, well-marked traces of iron were invariably found in that fluid. To those who remember the doctrine of solidism, so dominant in the schools of those



days, these investigations are not without their significance. Another experiment which interested him at this time very much was the inoculation of a cat with the virus of smallpox, the object being to ascertain whether Gendrin was right in asserting that the disease could be communicated in this way to an inferior animal. With the exception of slight suppuration, no ill effects followed.

In 1833 he performed a series of experiments upon rabbits with a view of throwing light upon manual strangulation, a full account of which was published in the ninth volume of the *Western Medical and Physical Journal*, and an abstract of which will be found in the second volume of Beck's "Medical Jurisprudence," with appropriate comments by that distinguished author. Shortly before these experiments were made, Dr. Gross was the chief medical witness in the case of Goetter, which constituted the most important event during his professional life at Easton. Goetter had killed, by manual strangulation in the eighth month of her pregnancy, a woman whom he had seduced. Dr. Gross made the post-mortem examination, but neglected to open the skull, and on this account was subjected to considerable annoyance during the trial, as the defence partly rested upon the ground that the woman had died of apoplexy. It was evident, however, from the marks upon her neck, and the condition of the face and lungs, that she had died from asphyxia, and he gave his testimony accordingly. The man was convicted solely upon circumstantial evidence, but the day before his execution he confessed that he had choked the woman to death with his hand.

In October, 1833, Dr. Gross, after having been offered the chair of Chemistry in Lafayette College, Easton, removed to Cincinnati to accept the demonstratorship of anatomy in the Medical College of Ohio, and here he commenced his career with a hundred and fifty dollars in his purse. His first class numbered nearly sixty out of a total class of about eighty-six, with a ticket of ten dollars. He gave regularly three lectures a week, chiefly on surgical and visceral anatomy, kept the rooms well supplied with subjects, and thus laid the foundation of the study of practical anatomy, which up to that time had been merely nominal in the Western States. In the spring and autumn he delivered private courses to small classes, earning little money, but accumulating valuable knowledge, and acquiring reputation as a zealous anatomist and a successful teacher.

Dr. Gross remained in the Medical College of Ohio only two sessions; when, in 1835, he was unanimously appointed to the chair of Pathological Anatomy in the Medical Department of the Cincinnati College. During the first few years after his appointment he abandoned himself almost wholly to a special course of study to aid him in the discharge of his official duties. His medical friends did all they could to obtain for him post-mortem examinations, of which full notes were always taken, and the

specimens preserved. In this way he laid the foundation of a museum of morbid anatomy, which, when the college was broken up, four years after its organization, contained a large number of valuable preparations.

It was from these dissections, from an elaborate course of reading, and from numerous visits to the slaughter-houses of Cincinnati, that Dr. Gross derived the knowledge upon which was founded his "Elements of Pathological Anatomy," issued in 1839, in two octavo volumes of upwards of five hundred pages each. The book was illustrated by numerous woodcuts and several coloured engravings, and was the first systematic work upon the subject ever published in the United States, or, indeed, in the English language. A second edition, greatly enlarged and thoroughly revised, was issued in 1845, in one large octavo volume of eight hundred and twenty-two pages, profusely illustrated, and full of marginal references, which greatly enhanced its value as a learned work. The third and last edition appeared in 1857, and in its preparation, especially the microscopical portion, the author was assisted by Dr. Da Costa. The work, in its original form, cost Dr. Gross, who had no one to advise or guide him, much labour and anxiety, having been written in the intervals of a large and increasing practice, during hours often snatched from sleep, and under the exhaustion of fatigue, upwards of three years having been spent upon its composition. That he had not laboured in vain was indicated not only by the reputation, both at home and abroad, which his researches in this branch brought him, but by an incident which was peculiarly gratifying to him. In July, 1868, Virchow had invited a number of prominent men to meet Dr. Gross at his residence in Berlin, among whom were Von Langenbeck, Von Graefe, Donders, and Gurlt. Toward the conclusion of the dinner, the host, availing himself of a lull in the conversation, drew forth a large volume from under the table, and, rising, took Dr. Gross by the hand, and made him an eloquent address, complimenting him upon his labours as a pathological anatomist, and referring to the work, which happened to be the second edition of his "Elements of Pathological Anatomy," as one from which he had derived much useful instruction, and one which he always consulted with much pleasure. It need not be said that the author was deeply flattered by this great honour, so unexpectedly and so gracefully bestowed upon him by the great German pathologist. This estimate of the value of his book was more than compensation for all the toil and anxiety which it had cost him.

While engaged in the preparation of his "Pathological Anatomy" Dr. Gross contributed numerous papers to periodical literature, instructed a number of private pupils, attended to a large general and consultation practice, and never missed a lecture. In 1839, he was unanimously appointed Professor of Medicine in the University of Virginia, a compliment the more honourable because it was unsolicited on his part, and a short time previously he had been offered the Chair of Anatomy in the University of



Louisiana. These offers were promptly declined; and it was well that they were, as a far more important position awaited him. During the spring of 1840 he accepted the Professorship of Surgery in the Louisville Medical Institute, afterwards the University of Louisville, which had been rendered vacant by the resignation of Dr. Joshua B. Flint. The most distinguished members of the faculty of this school at that time were Daniel Drake, Charles Caldwell, John Esten Cooke, and Jedediah Cobb. Dr. Gross was the youngest member of the faculty, and, although he had never taught surgery, he was thoroughly acquainted with its principles and practice, and had no misgivings upon entering upon the discharge of the duties of the chair. As a teacher he had never known what failure was, and he felt certain that he would succeed in his new field of labour. The class, during the first winter of his connection with the school, numbered two hundred and four, from which it afterwards increased to four hundred and six, the largest it ever had. As there was no rent to be paid, the net proceeds of each chair amounted for quite a number of years annually to nearly \$5000.

The government of the University of Louisville was invested in a board of trustees, who were self-appointing. In 1849, an attempt was made by the city of Louisville, through the Supreme Court of Kentucky, to wrest the government of the school from the hands of the men who had so ably managed its affairs, and to make the board elective by the people. At this particular crisis, being in doubt as to how the suit would terminate, Dr. Gross accepted the offer of the Chair of Surgery in the University of the City of New York, rendered vacant by the retirement of Valentine Mott, his colleagues being Granville Sharpe Pattison, John W. Draper, Gunning S. Bedford, Martin Payne, and Elisha Bartlett, all men of distinction and ability. Dr. Gross was then forty-five years of age, full of ambition, and determined to do full justice to his chair. He passed the winter of 1850-'51 in New York; but, long before the termination of the session, he was solicited by his late colleagues at Louisville to resume his chair in its University, the suit in the mean time having been decided in favour of the board of trustees. Dr. Gross found that the University of New York was then unpopular with the profession of that city, that the college edifice was ill-adapted to its objects, that living and rents were exorbitantly high, and, in short, that the prospects of the institution were not such as, in his opinion, to render it desirable to continue his connection with it. These considerations, along with the earnest wish of his family to return to their former home, led him to tender his resignation, and resume his chair in the University of Louisville, Dr. Paul F. Eve having withdrawn in his favour. The winter passed in New York was the most charming he had ever spent. With four didactic lectures and two clinics a week, and little private practice, he gave himself up to amusements, social intercourse, and visits to the hospitals.

He also attended a course of lectures on the microscope by Mr. Goadby, an English gentleman, and spent much of his leisure upon the composition of his work on the urinary organs, commenced several years previously, and completed a short time before the close of this winter's lectures. Had he remained in New York, he would doubtless have obtained a very large practice; but as he had left a more lucrative school, and had the most commanding surgical practice in the southwest, he deemed it most prudent to retrace his steps.

Soon after Dr. Gross first went to Louisville, he instituted a series of experiments upon dogs, with the view of determining, more accurately than hitherto had been done, the nature and treatment of wounds of the intestines. These investigations, which were commenced in the spring of 1841, and continued, with various intermissions, for upwards of two years, involved the sacrifice of seventy dogs, and the results were originally published in a series of papers in the *Western Journal of Medicine and Surgery*, and finally embodied in a separate monograph, forming an octavo volume of two hundred and twenty pages, illustrated by wood-cuts and coloured engravings, and entitled an "Experimental and Critical Inquiry into the Nature and Treatment of Wounds of the Intestines." The work was an exhaustive one, and comprised an account of his own researches as well as a sketch of the literature of the subject. It was most favourably noticed in a long review in the *British and Foreign Medico-Chirurgical Review*, and was quoted approvingly by Mr. Guthrie in his work on "Military Surgery."

Much labour was spent upon these experiments, and they involved not a little sacrifice of feeling on his part, as he was naturally fond of dogs, and anæsthetics had not yet been discovered. In this connection, in view of the attacks on the profession now being made in this city by the American Antivivisection Society, it will prove interesting to quote the language of Dr. Gross, penned ten years ago, on this subject. He says:—

"I have sacrificed for experimental purposes nearly one hundred dogs, and, if I were not thoroughly satisfied that the objects had been most laudable, I should consider myself as a most cruel, heartless man, deserving of the severest condemnation. The results of my experiments will, I am sure, eventually receive that attention to which their importance so justly entitles them. The experiments of Jones on hemorrhage, of Smith and Travers on wounds of the intestines, of Magendie and Charles Bell on the functions of the nerves, and of hundreds of physicians upon the action of medicines upon the human frame, have shed an immense flood of light upon the healing art, putting to flight the mawkish sentimentality of the societies for the prevention of cruelty to animals, which have made so much ado about this matter."

His work entitled "A Practical Treatise on the Diseases, Injuries, and Malformations of the Urinary Bladder, the Prostate Gland, and the Urethra" was published by Blanchard & Lea in 1851, the MS. having



been deposited with them on his return from New York to Louisville. The only then existing monographs on these affections of any importance in the English language were those of Sir Benjamin Brodie and Mr. William Coulson, two comparatively meagre productions, which, although very valuable, especially the former, were unsatisfactory. Hence such a work had long been needed, and it was at once accepted as an authority upon the subjects of which it treated. He had long been accumulating the materials, and not less than three years were finally spent in arranging them for publication. A second edition, greatly enlarged and improved, was issued in 1855, and formed a closely-printed octavo volume of 925 pages, illustrated by 181 wood-cuts. In an appendix of 29 pages is the first and only attempt as yet made to furnish a complete account of the prevalence of stone in the bladder, and of calculous disorders in the United States, Canada, Nova Scotia, Europe, and other countries. In 1876 a third edition of the work appeared under the editorship of Dr. S. W. Gross, who rewrote much of it, introduced considerable new matter, and produced a valuable treatise fully up to the existing state of the science.

Dr. Gross's "Practical Treatise on Foreign Bodies in the Air-Passages" was issued from the press of Blanchard & Lea, in 1854, in an octavo volume of 468 pages, illustrated by 59 engravings on wood. Its composition required upwards of two years, and as it was the first attempt, in any language, to systematize our knowledge upon the subject, it was, strictly speaking, a pioneer work. Dr. Morrell Mackenzie, the highest authority upon the subject in Europe, in speaking of it nearly thirty years after its publication in his own admirable treatise on "The Diseases of the Throat and Nose," makes the following remarks: "This invaluable essay gives full reports of two hundred cases, and is so complete that it is doubtful whether it will ever be improved upon; indeed, the excellent articles of Bourdillat and Kühn subsequently published, the former based on three thousand, the latter on three hundred and seventy-four cases, only confirm the conclusions previously arrived at by Gross." It might have been added that Kühn plagiarized much of his material.

During his residence at Louisville, Dr. Gross was a liberal contributor to the *Western Journal of Medicine and Surgery*, edited by Dr. Drake. Among his earliest papers was an account of a case of axillary aneurism, for which he tied the subclavian artery. It was accompanied by a statistical notice of all that had been done in regard to the surgery of this vessel up to that period. Another very elaborate paper was published in 1852 on the "Diseases and Operations on the Jaws," and one of his last contributions to its pages was a "Discourse upon the Life and Character of Daniel Drake," embracing nearly one hundred pages.

In 1851 he prepared a very full and exhaustive "Report on Kentucky Surgery" for the Kentucky State Medical Society, and afterwards published in its Transactions. It contained a biography of Ephraim



McDowell, with a full vindication of his claims as the originator of ovariectomy in 1809. In 1853 he sent to the American Medical Association, at its meeting in Richmond, Virginia, an exhaustive report on the "Results of Surgical Operations in Malignant Diseases." It comprised one hundred and thirty-seven pages of its volume of Transactions, and embodied the experience of the principal surgeons of all ages and countries. At the meeting of the Association at Detroit, in 1856, he read a "Report on the Causes which Retard the Progress of American Medical Literature," in which he took strong ground against the editing of foreign works by American writers, and animadverted in severe terms upon our medical journals for their indiscriminate praise of European reprints. During the same period he contributed several papers to the *American Journal of the Medical Sciences*. One of these was the report of a case, full of interest, of "Gunshot Wound of the Neck, involving the Spinal Cord and Subclavian Artery, and Causing Death by Convulsions." The paper, however, which attracted most attention was the report in the October number for 1852 of an operation which he performed in 1849 upon a child three years old, the subject of a congenital malformation, consisting in complete absence of the vagina and the presence of well-formed testes in the labia. The object was to prevent, effectually, if possible, the development with puberty of sexual desire, as the malformation would render intercourse quite impossible. Although the operation was severely criticized, Dr. Gross never felt cause to regret the course he had adopted.

In the winter of 1856, Dr. Gross and Dr. T. G. Richardson founded the *Louisville Medical Review*, a bi-monthly journal of medicine and surgery, of which only six numbers appeared, since, by a strange coincidence, soon after the publication of the first, both editors received and accepted appointments in Philadelphia, Dr. Gross to the chair of Surgery in the Jefferson Medical College, and Dr. Richardson to that of Anatomy in the Pennsylvania College. Soon after their removal to Philadelphia, they issued the *North American Medico-Chirurgical Review*, one of the peculiar features of which periodical was that each department of the sciences was intrusted to a separate contributor, whose duty it was to furnish an abstract of the current literature, so that it always fully reflected the latest discoveries and improvements. The work prospered until the outbreak of the war, when all the Southern subscribers dropped off, and the publishers, J. B. Lippincott & Co., were compelled to abandon it at the close of its fifth year of publication. To the pages of these journals Dr. Gross contributed a number of original articles and elaborate reviews, including among others a remarkable and curious case of "Congenital Hypertrophy of the Gums," the "Nature and Treatment of Tuberculosis of the Hip-joint," "August Gottlieb Richter: his Works and his Contemporaries—A Retrospective Sketch," into which he introduced an account of Desault, Benjamin Bell, and Antonio Scarpa, and, finally, "A Sketch of the Life and

Services of Ambrose Paré." The journals were also made, during the greater part of their existence, the vehicles of the reports of his clinics at the University of Louisville, the Jefferson Medical College, and the Philadelphia Hospital.

In 1855, Dr. Gross was solicited by Dr. René La Roche, a member of the Board of Trustees of the University of Pennsylvania, to allow his name to be placed before that body as a candidate for the chair of Surgery, vacated by the resignation of Dr. Gibson. He was assured that the entire medical faculty, with one exception, that of Dr. Wood, had pledged themselves to support him, and would use their best endeavours to secure his election. Various reasons, however, induced him to decline, and he wrote, at the request of Dr. D. Hayes Agnew, a warm testimonial in favour of Dr. Henry H. Smith, who was elected.

Dr. Gross remained at Louisville for sixteen years, from October, 1840, to September, 1856. He became closely identified with the people and the interests of that city, and he was regarded as the most prominent surgeon of the southwest. Hence it is not surprising that, when it was announced in May, 1856, that he had accepted the chair of Surgery in the Jefferson Medical College, universal regret was expressed by both the medical profession and the citizens of Louisville. He received numerous letters from medical men in various parts of the valley of the Mississippi, remonstrating with him against his removal, but he did not feel that he could decline the honourable position in his Alma Mater which had been unanimously tendered him by its Board of Trustees and the faculty. Moreover, a strong motive which impelled him to remove to Philadelphia was the desire to be relieved of a large and annoying family practice, so that he might write an elaborate system of surgery, for which his leisure in Louisville was not sufficient, but upon the composition of which he had been engaged for several years.

Dr. Gross reached Philadelphia on Saturday, September 26, 1856, and delivered his first clinical lecture on the following Wednesday. He brought with him about one-half of his library, which consisted of nearly 4000 volumes, having deposited the remainder in boxes in the University of Louisville for safe-keeping. As he was about to go before his class on the ensuing 24th of December, the following telegram was handed to him: "The University was totally consumed by fire early this morning, including all your books and minerals." This intelligence greatly shocked him, his loss being the more keenly felt, as it comprised the most complete collection of works on the genito-urinary organs ever brought together in this country. Many of the books and pamphlets were from the library of the late John C. Crosse, the eminent lithotomist of Norwich, England, and could never be replaced.

In order that his literary pursuits might not be too much interfered with, Dr. Gross, upon his arrival in Philadelphia, confined himself strictly

to office and consultation business, to patients from abroad, and to surgical operations. He set to work vigorously upon the completion of his "System of Surgery," which he had determined to make the most elaborate, if not the most complete, treatise in the English language. The heads of his lectures served him as a valuable guide, and he generally wrote with great facility, as his knowledge of the subject, from long study, practice, and contemplation, was extensive, and, in the main, very accurate. He spent from five to eight hours a day upon his manuscript, and, unless greatly interrupted, he seldom wrote less than from ten to fifteen pages of foolscap in the twenty-four hours, and rarely rewrote anything, although he not unfrequently interlined. In this way he worked steadily until July 8, 1859, when he finally wrote the preface. Soon after, the work was issued in two portly octavo volumes, numbering, in the aggregate, 2360 pages, and profusely illustrated by engravings on wood. The sixth edition was published in October, 1882, and it was so thoroughly changed and so greatly improved over the preceding editions, as to constitute essentially a new production. The review of this work which gratified him most was given of the fifth edition in the *Dublin Journal of Medical Science* for 1874. It covered nearly fifty pages of that periodical, and was at once able, analytical, and critical. The review thus concludes: "His work is cosmopolitan, the surgery of the world being fully represented in it. The work, in fact, is so historically unprejudiced, and so eminently practical, that it is almost a false compliment to say that we believe it to be destined to occupy a foremost place as a work of reference while a system of surgery, like the present system of surgery, is the practice of surgeons." A Dutch translation, by Dr. Sachse, appeared at Nieuwediep in 1863.

At the outbreak of the war, Dr. Gross wrote a brief "Manual of Military Surgery," a pocket companion for the young surgeons who were flocking into the army. It was composed in nine days, and published in a fortnight from the time of its inception. Under the care of Lippincott & Co., it passed through two editions of 2000 copies each, was republished at Richmond, and was extensively used by the Confederate surgeons, and in 1874 was translated into Japanese and published at Tokio.

In 1861, Dr. Gross edited an octavo volume of upwards of 800 pages entitled "Lives of Eminent American Physicians and Surgeons of the Nineteenth Century," his own contributions being sketches of Ephraim McDowell, the ovariologist; Drake, the great Western physician; and John Syng Dorsey, the nephew of Physick, and the author of the "Elements of Surgery."

In 1868, in the address which he read before the American Medical Association at its meeting at Washington, as its President, he called attention, among other matters, to a new method of appointing medical witnesses as experts in cases involving medico-legal considerations. In



1869, at the meeting at New Orleans, an elaborate paper from his pen on the "Training of Nurses" was read, which attracted much attention. At its meeting at Detroit, in 1874, he read an address on "Syphilis in its Relation to the National Health," which received the highest commendation, Dr. Sims offering a resolution for the appointment of a committee to present the subject to the consideration of the legislatures of the different States and Territories. The following year he read before the same body, at its meeting at Louisville, "A Discourse on Bloodletting considered as a Therapeutic Agent;" and at its meeting in Chicago, in 1877, he read a paper on the "Proximate Cause of Pain." In October, 1875, he delivered two elaborate lectures introductory to his course at the College on the "History of American Medical Literature from 1776 to the Present Time," which were afterwards issued in a brochure of 85 octavo pages.

In the *American Journal of the Medical Sciences* for April, 1876, is an article, occupying 53 closely printed pages, from his pen on the "History of American Surgery from 1776 to 1876," which is one of several papers prepared by different writers illustrative of the progress of the different branches of medicine in this country during the century, and which, together with those papers, was issued in book form under the title of a "Century of American Medicine."

During his residence in Philadelphia, in addition to the works and papers already mentioned, Dr. Gross made many literary contributions to various journals and societies, among which may be mentioned "Practical Observations on the Nature and Treatment of Prostatorrhœa," 1860; "Brunonianism, Toddism, and other Isms," 1860; "Necrological Notice of Jedediah Cobb, M.D., formerly Professor of Anatomy in the University of Louisville," 1861; "Biographical Sketch of Charles Wilkins Short, M.D., formerly Professor of Materia Medica and Medical Botany in the University of Louisville," 1865; "Then and Now," 1867; "The Live Physician," 1868; "A Memoir of Valentine Mott, M.D.," 1868; "A Memoir of Robley Dunglison, M.D.," 1869; "Nature's Voice in Disease and Convalescence," 1870; "A Discourse on Ambrose Paré," 1873; "An Oration in Honour of Ephraim McDowell," delivered before the Kentucky State Medical Society at its meeting at Danville, at the dedication of the monument erected to his memory, 1879; "A Memoir of Dr. Isaac Hays," late editor of the *American Journal of the Medical Sciences*, 1879; "John Hunter and his Pupils," 1881; "Value of Early Operations in Morbid Growths," 1883; and "The Best Means of Training Nurses for the Rural Districts," 1883. His last contributions, composed a few weeks before his death, were one on "Wounds of the Intestines," read before the American Surgical Association by Professor Richardson, April 30, 1884; and one on "Lacerations of the Female Sexual Organs, consequent upon Parturition, their Causes and their Prevention," read before the American Medical Association on May 8, 1884, two days after he expired.

Dr. Gross became a writer early in his professional life. He had hardly received his degree before he began to translate French and German medical works. During the first summer, he assisted Dr. John D. Godman, the anatomist and naturalist, in translating the Duke of Saxe-Weimar's "Travels in the United States," and the next year he wrote his work on the "Bones and Joints." He was always a hard student and incessant thinker. He accomplished the vast amount of writing which he did simply by working in an orderly and systematic manner, with a distinct, definite aim, and never allowing anything to interfere with the consummation of his labours. As he frequently said, his genius was the genius of industry, perseverance, and common sense. He thought out many of the details of his writings while making his daily rounds, and it was his constant habit, on returning to his office, to commit to paper what he had outlined in his busy brain.

After his graduation, the great ambition of Dr. Gross was to become a teacher. His first effort in this direction was as Demonstrator of Anatomy in the Medical College of Ohio, in which, as previously stated, he delivered three lectures a week for two years. In the Cincinnati College he lectured for four years on pathological anatomy, after which he taught surgery for forty-two years. During all this time he invariably spoke extemporaneously with the aid of a few brief headings; but he never appeared before his class without previous study and meditation, and a thorough comprehension of his subject. Order and system were among his more important attributes as a teacher. Those who have heard him will never forget his enthusiasm; the clearness, force, and directness of his language; the marked interest he felt in what he was saying and doing; and the evidence of the feeling that he had a solemn duty to perform, and that upon what he uttered might depend the happiness or misery of thousands of human beings. The opening portion of his course on surgery was devoted to the discussion of the principles, the topics discussed having been inflammation and its consequences, syphilis, struma, tumours, and wounds. These topics being disposed of, he took up the diseases and injuries of particular regions, organs, and tissues, confining himself as much as possible to matters of fact, and not indulging in hypotheses, conjecture, or speculation. His knowledge of pathological anatomy was of immense benefit to him in these exercises, and he freely availed himself of it as a means of illustrating every subject that he had occasion to discuss. Indeed, he always asserted, that whatever reputation he possessed as a teacher and a writer, was in great degree due to his familiarity with morbid anatomy. What added greatly to his charm as a lecturer were his admirable diction, his commanding presence, and a resonant and well-modulated voice.

In March, 1882, being in the full possession of his intellectual and physical powers, but being actuated by a desire to spend the remainder of his days in comparative repose, he resigned the chair of Surgery in the

Jefferson Medical College, which he had filled for twenty-six years, and he was thereupon unanimously elected emeritus professor.

Dr. Gross had a great fondness for surgery. After his removal to Louisville, his name became widely known as a practical surgeon, and there was no one in the Valley of the Mississippi who did so large a practice as he, especially after the retirement of Dr. Dudley, who had so long wielded the surgical sceptre at Lexington. He possessed all the qualities of a good operator, a thorough knowledge of regional anatomy, quick perception, rapidity in judgment, perfect self-control, a steady hand, and an unflinching eye. He rarely failed to accomplish what he had set out to do, and he never lost a patient upon the table from shock, hemorrhage, or anæsthesia. He performed many major operations, and had an extended reputation as a lithotomist, having cut 165 patients, with 14 deaths. Of 72 children, all except 2 survived, while of 93 operations in adults and old persons, 12 died.

During the War of the Rebellion, he took great interest in gunshot wounds, visiting many battle-fields and hospitals to observe their peculiar features, of which he made valuable notes. In the spring of 1862, Surgeon-General Hammond offered him the post of Surgeon-in-Charge of the George St. Hospital in this city, but as he had no fitness for the position he promptly declined it, preferring to be placed in charge of the surgical ward, so as to be the better able to study gunshot injuries.

In addition to the various experiments already alluded to, he made not a few original contributions to surgery. He was the first to suggest or perform for ganglia of the hand and foot subcutaneous section followed by firm compression; high amputation in senile gangrene; the suturing of divided nerves and tendons; deep stitches in wounds of the wall of the abdomen, to prevent hernia or protrusion of the bowel after recovery; wiring the ends of the bones in dislocations of the sterno-clavicular and acromio-clavicular articulations; a modification of Pirogoff's amputation at the ankle-joint, unjustly ascribed to Dr. Quimby; a mode of operating for inverted toe nails; an operation for neuralgia of the jaws in old persons; laparotomy in rupture of the bladder; and a direct operation for hernia by suturing the pillars of the ring. He was also the first to describe prostaticorrhœa, pododynia, and the use of adhesive plaster as a means of making extension in the treatment of fractures of the lower extremity. He was the inventor of an enterotome, urethrotome, tracheotomy forceps, blood catheter, arterial compressor, tourniquet, an instrument for extracting foreign bodies from the ear and nose, and an apparatus for the transfusion of blood. In his "Pathological Anatomy" he has given a description of a number of dissections of specimens of false conceptions, or uterine moles, as they are termed, the first account in the English language. He was also the first to suggest the use of ergot in the treatment of diabetes. The case was that of a woman brought to him by Dr. Shearer,



of Berks County, Pa., who published an account of it in the *Medical and Surgical Reporter*.

Dr. Gross's majestic form and dignified presence, his broad brow and intelligent eye, his deep, mellow voice, and benignant smile, his genial manner and cordial greeting, remain indelibly impressed upon the memory of all who knew him. He was a man of deep mind and broad views, and he was a model of industry and untiring zeal. He always had some literary work in hand, and he was in the habit of rising early in the morning, generally at six o'clock, and accomplishing considerable writing before breakfast. His style was vigorous and pure, and the amount of work he accomplished was simply immense. It is safe to say that no previous medical teacher or author on this continent exercised such a widespread and commanding influence as did Prof. Gross. His writings have been most learned and voluminous, and his classes among the largest that have ever been collected in this country. As a citizen he was public-spirited and influential, and he always most jealously guarded the *esprit de corps* of his own profession. In every project to advance its interests or to protect or honour any of its deserving members he was foremost. On account of the universally recognized eminence of his authority as a surgeon he was frequently called into court as an expert to testify in malpractice suits, and he was ever ready cheerfully to give his time, knowledge, and influence in maintaining the right, and he never thought any trouble too great to aid an unfortunate professional brother. He took a deep interest, too, in the struggles and success of young men, born perhaps of his own experience, and he was always ready to assist them by his counsel and advice. His house was the seat of a wide and generous hospitality, and distinguished strangers, professional and non-professional, were welcome guests at his table. While fond of social life, he never appeared so happy as when surrounded by his own family. He was, too, an ardent lover of the beauties of nature, with a special fondness for flowers, of which a few were always to be found close by his side on his study table.

Dr. Gross attained unusual eminence in the world of medicine. He was a member or fellow of numerous medical societies and other organizations, both American and foreign, including among the former the College of Physicians of Philadelphia, the Philadelphia County Medical Society, the Pathological Society of Philadelphia, the Philadelphia Academy of Surgery, the Academy of Natural Sciences, the American Philosophical Society, the Pennsylvania State Medical Society, the Medical Jurisprudence Society of Philadelphia, the Massachusetts Medical Society, the New York State Medical Society, the Academy of Medicine of New York, the Cincinnati Medical Society, the Ohio Historical and Philosophical Society, the Medical Society of Louisiana, the Kentucky State Medical Society, the American Medical Association, the

American Surgical Association, the National Association for the Protection of the Insane, and the American Public Health Association. He was the founder of the Pathological Society of Philadelphia, of the Academy of Surgery of Philadelphia, and of the American Surgical Association, and one of the founders of the Kentucky State Medical Society, and of the Medical Jurisprudence Society of Philadelphia, of which organizations, as well as of the International Medical Congress, held at Philadelphia in 1876, the Philadelphia County Medical Society, the Pennsylvania State Medical Society, the Kentucky State Medical Society, the American Medical Association, the Medical College Association, and the Pennsylvania College of Dental Surgery he served as president. Of foreign societies, he was an honorary member of the British Medical Association, the Royal Medical and Chirurgical Society of London, the Clinical Society of London, the Pathological Society of London, the Medico-Chirurgical Society of Edinburgh, the Imperial Medical Society of Vienna, the Medical Society of Christiania, the Royal Society of Public Medicine of Belgium, and the Medical Society of San Luis Potosi.

On April 3d, 1881, Dr. Gross received a letter from Mr., now Sir, William MacCormac, Honorary Secretary-General, inviting him to deliver the address in behalf of the American delegates to the International Medical Congress, which met in London in August of that year. To his great regret, he was unable to be present, and therefore was forced to decline the honour.

Dr. Gross was made an LL.D. by the Jefferson College, of Canonsburgh, in 1861. In 1872, the University of Oxford conferred upon him the degree of D.C.L.; the University of Cambridge her degree of LL.D. in 1880; and the University of Edinburgh and the University of Pennsylvania conferred the same degree, *in absentia*, in April and May, 1884.

Save an occasional twinge from rheumatic gout during his later years, Dr. Gross enjoyed excellent health to within a few months of his last illness. During the autumn and early winter of 1883, he was troubled with several attacks of indigestion, swollen feet, and other signs of weak heart, which, however, readily yielded to remedies. Early in January he had a mild attack of bronchial catarrh, which confined him to the house. Being thus deprived of out-door exercise, signs of dyspepsia again set in, and with the view of gaining strength to attend the meetings of the American Surgical Association, and of the American Medical Association in May, upon which he had set his heart, he went to Atlantic City on the 31st of March. On the following Sunday he was seized with intense nausea, and reached home the next afternoon much exhausted. From this time until his decease, May 6th, at twenty minutes to one o'clock, it was with great difficulty that he could be induced to take nourishment, and death ensued from sheer exhaustion, despite the unremitting attention of Professor Da Costa, and of his son, Professor S. W. Gross, aided



by the wise counsel of his able and distinguished friend, Professor Austin Flint.

The post-mortem examination disclosed marked gastric catarrh, with irregular thickening of the mucous membrane, fatty heart, and a large cyst of the right kidney. The brain weighed forty-eight ounces.

The funeral services were held in the presence of his family and attendants, on the afternoon of May 7. His remains were then taken to the crematory at Washington, Pa., where they were reduced to ashes. On the following Sunday they were deposited in the family vault beside the coffin of his wife, at Woodlands Cemetery. These last rites were strictly in accordance with his expressed wishes; and his friends had known for many years his desire to be cremated, which he regarded as the only decent and correct manner of disposing of the dead.

The record of such a well-spent life is a valuable lesson which we do well to study and reflect upon. It serves as both precept and example, and invites us to emulate that energy, assiduity, and perseverance through which, aided by considerable native ability, the subject of this memoir acquired widespread distinction as a surgeon, a writer, a teacher, and a man. It shows that talent with industry cannot be repressed by adverse surroundings, but that it grows stronger in overcoming obstacles. Had Dr. Gross after graduation supinely waited for his ability to be discovered and for preferment to seek him, sheer want would probably have driven him to other pursuits, and his name would have been unknown to surgery. But, as we have seen, from the very moment of his graduation he entered upon the restless contest for distinction, and he created his own opportunities. When as yet he had had no time to gain experience in the practice of his profession, he did useful work, and made his name known by translating the books of several Continental authors of distinction. Shortly afterward, under all the disadvantages of restricted means and adverse surroundings, he undertook original investigations in anatomy, physiology, pathology, and surgery, which gradually gave him a substantial and constantly-growing reputation, until finally he reaped, through the force of his own labours, all the honours which his own profession could bestow, and enjoyed a celebrity extending over both continents.

In the death of Dr. Gross we have lost one of the brightest examples of the skill and learning, the conscientiousness and assiduity, the patience and perseverance, the dignity and morality by which our profession is truly ennobled. He has left us as a heritage a world-wide reputation which, as we regard it with conscious pride, cannot but stimulate us to a higher sense of our duty to our profession and to our fellows.

I. M. H.





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